MEMORANDUM FOR AMSJM-CCA-R ATTN: JAN TEDELL

SUBJECT: Transmittal of Completed Engineering Action Number R2A2031 and Implementation Information

- 1. The ARDEC Configuration Control Board Directive (CCBD) dated 2-6-03 and associated change documentation (encl) relative to item nomenclature $\underline{M67}$ is provided for your appropriate expeditious action.
- 2. The AMSTA-AR-FSA-RA POC for this action is Mr. Jahn, ext. 28133, DSN 793-8133.

Encl

JOHN E. HYER

Artillery & Mortars Team Leader

CF:

AMSTA-AR-QAD AMSTA-AR-FSA-RA

Page 1 of 2_

CONFIGURATION	N REVIEW	BOAL	RD [DIRE	CTIVE		1. PAN	R2A2	031		
2. CONFIGURATION ITEM / PART N 105MM CHARGE PROPEL	IUMBER					ie / Lev Arty &	EL / DATI		02/06/2	.00.3	3
4. TYPE OF ACTION	.I .IIN(† IVIO /	W1114			N ORIGINATOR				· · · · · · · · · · · · · · · · · · ·		
X ECP VECP					ARDEC, AM	/ISTA-	AR-WE	E-B			
6. ACTION ORIGINATOR NUMBER AND DATE											
VEP RFD	от	HER			R2A203	31 ‡ 1	2/20/2	2002			
7. COORDINATION WITH COMBAT Determine by completing a Combat Deve Checksheet for all class 1 ECPs for type	eloper Coordinatio	n	8. \$	SYNO	PSIS OF CHANG	E					
INFORMAL SCHOOL CODES FOR NOTIFICATION	ON (Key on back)	FORMA	L								
01 04	07	YES	. 1		changes pro	•	-		-	oth to	0
X NO X 03 06	08		' a	crylic	cloth on the	M67	oropella	nt charge) .		
OTHER	0	NA	-								
9. MODIFICATION TO SUBMITTED	ACTION	1	\dashv								
NONE REVISION CORRECT		PAGE 2						,			
10. POSITION ON RECOMMENDAT	ION TO CONFI	GURATIO			R						
OFFICE SYMBOL S	IGNATURE			CUR	OFFICE SYM	ROI		SIGNATUR	F	CON	
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REMARKS:											
Can Nove Chart											
See Next Sheet											
1											
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12a. ECP CLASSIFICATION 12b. RFW/F	RFD DESIGNATION	1	2c. REC		G RFD/RFW		RESULTS M RFW/D	12e. COST IMP	ACT		
X ' C	RITICAL		님	NO	n ncountro	1 —	'ES	X NON	IE		
	AJOR MINO	, ,	<u> </u>		P REQUIRED?		10	INCF	REASE \$		
	γ				YES NO			DEC	REASE \$		
13a. CHAIRMAN RECOMMENDATIO	2	JOHN			V 1-	\sim	یکک	ري	13c. DATE	200	3
APPROVE APPROVE AS MODIFIED JOHN E. HYER Artillery & Mortars Team Leader					13d. TELEPH						
DISAPPROVE OTHER			PR	INTED/TY	PED NAME, OFFICE SYM	BOL AND SI	GNATURE		DSN 793	3-812	7
14a. DECISION ON ACTION					N MANAGER	11.	_	()	14c. DATE	75	2//
APPROVE APPROVE AS MC	DIFIED				ERMAN	XV	سہر		14d. TELEPH		
DISAPPROVE OTHER		Chief	, FS	AG PI	BAAMES HQGU FM	NGR S	UPPQRT	TEAM	DSN 7		93

CONFIGURATION REVIEW BOARD DIRECTIVE (CONTINUED)

Page 2 of 2

CONTROL NUMBER

R2A2031

- 11. remarks
 - a. Purpose: ECP changes propellant bag material from rayon to acrylic cloth.
 - b. Recommendation: APPROVE
- c Rationale: The rayon propellant bags of the M67 propelling charge had been observed to deteriorate over periods of time to the extent that the bags can no longer hold the propellant. This bag deterioration would affect safety/reliability of the propelling charge. The acrylic bag is more durable and has passed all the required testing.
 - d. Modification: NONE:
 - e. SQAP AFFECTED: NONE
 - f. TMs AFECTED: NONE
 - g. OTHER SYSTEMS AFFECTED: NONE
 - h. CONTRACTS AFFECTED: N/A
- i. IMPLEMENTATION INSTRUCTIONS: This action is forwarded to AMSJM-CCA in order to provide the configurations manager decision to the OSC for this action under the above contract. Attn: JAN TEDELL
 - j. READINESS IMPACT: NONE
 - k. EOD IMPACTED: NONE
 - I. VE SAVINGS: N/A
- m. RATIONALE/CALCULATION FOR COST CONCESSION (RFW) OR CONTRACTUAL COST ADJUSTMENT (RFW, RFD, ECP, VECP): N/A
 - n. OZONE DEPLETING SUBSTANCE ELIMINATED: NO

		CONTROL BOARD DI	RECTI	VE		1. PAN R2A20	31		
2a. TYPE ITEM	- · - · • •			2b. TYPE	ACTION	-			
	NSFERRED			×	ECP	RFD			
PROJ	JECT MANA	AGED	[VEP	RFW	Other		_
Othe	·		_		VECP				_
3a. CONTRACT(s) AFF	ECTED			3b. SOLIC	OTATION(s	s) AFFECTED			
4. APPLICATION					5. COST	T IMPACT			
X Apply to currer	nt contracts/	/solicittions	RETROFIT	r BY:		NONE			
× Apply to future				ttrition					
Formalizes cha	nge previous	sly authorized via:		tinuon lin o r	>	INCREASE \$ \$0.8	1 per M67		
				inor Iteration		DECREASE \$			
Associated or I		panges	м	iwo		DECUENSE 9			
as listed in rem		FIGURATION MANAGER:			<u> </u>		- 4071011		
-					6b. MO	DIFICATION(s) TO SUBMITTE NONE ************************************	D ACTION FOLLOWS:		
APPROVE	API	PROVE WITH MODIFICATION	T- 1	_			TOLLOWS.		
DISAPPROVE		OTHER: SEE NO	IE	၁					
7. POSITION ON RECO	MMENDATI	ION TO CONFIGURATION MANAGER							
DOCUMENTS/* DISCIPLINE	(MPACTE) YES NO			TELEPHONE		TYPEO/PRINTED NAME AN	D SIGNATURE	CONCUI YES	R NO
PRODUCT DRAWINGS	×	AMSTA-AR-WEE-B	(973)	724-498	7 A	ADRIANA L. ENG AC	rional Eng	\times	
SPECIFICATIONS/QAPs	×	AMSTA-AR-CLAT-P SIZE NOTE 3.	973.7	124.393	4 /	HENRY J. YAN DAK	F, III V	X	
PACKAGING DATA	X	AMSTA-AN-WER	973	724-	28/3	PETER I SNITH JU	ill,	\times	
ENCILEBRING	X			724-59		El Collinati	LUAN	X	
MAINTENANCE	X	AMSTA-AR-WEZ-A				ATTEN Alex YENGH SCHOON MA	Ne væx	X	
OTHER (Specify)	X	AMSTA-AR-QAW-S			•	Fiembur	<i>,</i>	X	
VALUE ENGINEERING									
* NOTE: A Notice of	Revision (NC	OR) is required for each document need	ding revisi	ion when a c	ange is re	commended for approval.			
REMARKS									
resistant to deter	rioration	this ECP based on the follo and have a much longer sl in the rayon propellant bags	nelf life	than the	rayon	propellant bags, and	(2) the acrylic p		
SEE NOTE 3 ATTACHED FOR MODIFICATIONS TO THE ECP.									
9a. OFFICE SYMBOL	9b.	TYPED/PRINTED NAME AND TITLE	E	9c. SI	GNATURE	P.C.	19d. DAYS	100)
AMSTA-AR-WEEB ADRIANA ENG Advisor of Eng. 90. TELEPHONE 987.									

ENGINE	ERING CHA	NGE PROPOSAL (E	CP), PA	GE 1	021220	OMB No. 0704-018	38
searching existing data sour regarding this burden estim	rces, gathering and mi nate or any other aspi	ormation is estimated to average 2 sintaining the data needed, and compact of this collection of information, ctorate for information Operations a	pleting and revi including sugg ad Panass 12	ewing the collection of jestions for reducing the to lefternor Devis High	information, Send comments burden, to Department	ACTIVITY NO.	
PLEASE DO NOT RE FORM TO THE GOV NUMBER LISTED IN 1	Office of Management TURN YOUR CO ERNMENT ISSUI TEM 2 OF THIS I	to and Budget, Paperwork Reduction P MPLETED FORM TO EITHI NG CONTRACTING OFFICE ORM.	ER OF THE	SE ADDRESSES. E CONTRACT / P	RETURN COMPLET ROCURING ACTIVI	3. DODAAC	
4. ORIGINATOR b. ADDRESS (Street, City, State, Zip Code) 5. CLASS OF ECP							
a, TYPED NAME (Fir Last) ADRIA	st, Middle Initial, NA L. ENG	US ARMY ARDEC AMSTA-AR-WEE-B			6. JUST. CODE	7. PRIORITY	\dashv
		PICATINNY ARSEN	AL, NJ 07	/806-5000	D	R	
8. ECP DESIGNATION					9. BASELINE AFFE		1
a. MODEL/TYPE M67	b. CAGE CODE 19203	c. SYSTEM DESIGNATION 105MM ARTILLERY		ITIONS	FUNCTION/ ALLOCATE		
d. ECP NO. R2A2031			e. TYPE	f. REV	10, OTHER SYS./C	NO NO	ED
11. SPECIFICATIONS	AFFECTED	 	<u> </u>	12. DRAWING		110	\dashv
or Edinication		Specification/Document No.	Rev. SCI		Numt	per Rev.	NOR
a. SYSTEM							
b. DEVELOPMENT				19203	9205472		_
c. PRODUCT 13. TITLE OF CHANG	35			19203	9288695		
		IATERIAL FROM RAYO	ON CLOT	H TO ACRYLIC	CLOTH		
14. CONTRACT NO.	AND LINE ITEM			URING CONTRAC			
N/A					ial, Lasti NORMA		
16. CONFIGURATION	N ITEM NORSENC	I ATLIDE	b. CODE	W52P1J	c. TELEPHO	NE NO.DSN793-3709 17. IN PRODUCTION	IN I
		M1, M60A2, M84, M84	A1, M84B	1, XM916, M62	!9		NO
18. ALL LOWER LEV	EL ITEMS AFFEC	TED					
 a. NOMENCLATURI 105MM, CHARGE 		G, M67		PART NO. 88695 AND 920	c. NSN 5472		
19. DESCRIPTION OF	F CHANGE	· · · · · · · · · · · · · · · · · · ·		<u> </u>	L		\dashv
SEE CONTINUAT	TION SHEET						~
SEE CONTINUE	ION SHEET.						ر کو
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20. NEED FOR CHAN	NGE						. 17
SEE CONTINUAT	TON SHEET.						2002
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21. PRODUCTION EF	FECTIVITY BY S	ERIAL NUMBER			DUCTION DELIVER	Y SCHEDULE	
23. RETROFIT			N/	<u> </u>			\dashv
a. RECOMMENDED ITEM EFFECTIVITY b. SHIP / VECHICLE CLASS AFFECTED							
N/A			N/		·		
c. ESTIMATED KIT DELIVERY SCHEDULE d. LOCATIONS OR SHIP / VEHICLE NUMBERS AFFECTED N/A N/A							
24. ESTIMATED COSTS / SAVINGS UNDER CONTRACT 25. ESTIMATED NET TOTAL COSTS / SAVINGS N/A					AVINGS		
26. SUBMITTING ACTIVITY a. AUTHORIZED SIGNATURE ACTIVITY CHEMICAL ENGINEER b. TITLE CHEMICAL ENGINEER							
27. APPROVAL / DIS		<u> </u>					
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Engineering Change Proposal Continuation Sheet

PAN: R2A2031 ECP #: R2A2031

Block 10. OTHER SYSTEMS/CONFIGUERATION ITEMS AFFECTED M314A3 Illuminating, M927 HERA, M1 HE, M60A2 Smoke, M84 Smoke (M84, M84A1, M84B1), XM916 DPICM, M629 Tactical CS.

Block 19. DESCRIPTION OF CHANGE

This ECP replaces the existing rayon propellant bags with more durable acrylic propellant bags for the 105mm M67 Propelling Charge.

Block 20. NEED FOR CHANGE:

The rayon propellant bags of the M67 propelling charge had been observed to deteriorate over periods of time to the extent that the bags can no longer safely hold the propellant. This propellant bag deterioration would affect safety/reliability of the M67 propelling charge, reduce service life of the 105mm tactical rounds, and incur costly maintenance rework. This ECP resolves propellant bag deterioration problem by replacing the rayon propellant bags with a durable acrylic propellant bags.

The M67 could use either laminated (lead foil) cloth or lead foil without lamination as the decoppering agent in accordance with the TDP. Due to environmental hazard, the existing adhesive used for lamination is not available from any US source for test or production purpose. Therefore, the laminated (lead foil) cloth is cancelled by this ECP.

QUALIFICATION TEST SUMMARY:

1. Compatibility Test:

A test was conducted in accordance with MIL-STD-286 (Method 408.1.1) to verify there was no adverse reaction between the acrylic cloth and M1 propellant (attachment 1).

2. Ballistic Firing Tests:

As shown in Tables 1-3, ballistic Uniformity Test results indicated that the M67 propelling charges with the proposed acrylic bags met the muzzle velocity and pressure requirements in accordance with MIL-P-60318.

3. Residue Evaluation:

The acrylic bags left practically no residue after ballistic firing tests during Uniformity Test (Figure 3) and Sequential Environmental Test (Table 8).

4. Sequential Environmental Test:

A total of 120 test rounds (with newly manufactured acrylic propellant bags), and a total of 120 control rounds (with newly manufactured rayon propellant bags) passed the sequential

environmental test in accordance with Figure 7 of ITOP 4-2-504. No hazard such as burning or detonation occurred during handling, transportation, storage and ballistic firing.

Table 4 summarizes the number of damaged M67 propelling charges after 120 test rounds and 120 control rounds were subjected to logistic vibrations. Approximately 5%, 3%, 24% and 68% of the damages were found on zone 1, zone 5, zone 6 and zone 7 bags respectively. Table 5 summarizes the number of damaged bags with propellant leakage after logistic vibrations. It's important to note that the acrylic bags were equal or better than the rayon bags in terms of extend/amount of bag damage.

Table 6 summarizes the number of damages/holes found on 20 test rounds and 20 control rounds after loose cargo with fiber containers.

Table 7 summarizes ballistic test results of a total of 80 rounds which had been subjected to logistic vibrations. Table 8 shows percentage of these M67 with recoverable cloth residue.

5. Propellant Cloth Shelf Life Study: Deleted per note 3

An accelerated aging test was conducted to measure the tensile strength loss of both rayon and acrylic propellant bags at elevated constant temperatures (65°C, 75°C, 85°C, 95°C) at 75% relative humidity. Results of these tensile strength data were fit to the following Arrhenius degradation model (Ref. 1). Once the degradation is fitted, it can be used to predicted tensile strength loss for service conditions.

 $Log(S) = \alpha + t/S exp(-\gamma/T)$

Where: S = tensile strength, t = time, T = temperature (absolute). The coefficients are estimated from regression of the tensile strength data. Plots of the fraction loss in tensile strength using the above degradation modeling techniques for each cloth type are shown in Figures 1 and 2.

The predicted mean lifetimes at the service temperatures are shown in Table 9. At these given temperatures, the mean lifetimes of the acrylic propellant bags are estimated to be 9 to 11 times longer than those of the rayon propellant bags. Since the propellant bags should survive rough handling/transportation, it is proposed 10% loss in tensile strength be used as the end point for shelf life prediction. Based on this, mean lifetime of the acrylic propellant bags are estimated to exceed 20 years in controlled storage and far exceed 2 years in uncontrolled storage.

6. Reference:

Nelson, Wayne (1990), Accelerated Testing: Statistical Models, Test Plans, and Data Analyses, John Wiley & Sons, Inc., New York.

Addition per Note 3:

5. Result of accelerated aging test:

Acrylic cloth shows a much greater resistance to degradation based on accelerated aging data taken at 65,75, and 85 degrees C and 75 % RH. Each data point in the test matrix is replicated four times. There is statistical evidence that the acrylic fiber is more heat and acid resistant at the accelerating conditions. If the data is extrapolated to ambient, a greater service life will be obtained using the acrylic fiber. "

Table 1. Uniformity Test at + 70 deg F

	Test rounds (with	acrylic bags)	Control rounds (with rayon bags)		
Zone	Velocity (ft/sec)	Pressure (kpsi)	Velocity (ft/sec)	Pressure (kpsi)	
3	Mean=760	Mean=9.3	Mean=763	Mean=9.5	
	Std dev=2.3	Std dev=0.2	Std dev=2.7	Std dev=0.1	
7	Mean=1527	Mean=35.8	Mean=1530	Mean=35.3	
	Std dev=3.0	Std dev=0.5	Std dev=2.9	Std dev=1.8	

Table 2. Uniformity Test at + 145 deg F

	Test rounds (with a	acrylic bags)	Control rounds (with rayon bags)		
Zone	Velocity (ft/sec)	Pressure (kpsi)	Velocity (ft/sec)	Pressure (kpsi)	
3	Mean=775	Mean=10.2	Mean=783	Mean=10.4	
	Std dev=2.8	Std dev=0.1	Std dev=3.1	Std dev=0.2	
7	Mean=1571	Mean=39.4	Mean=1577	Mean=39.6	
	Std dev=2.9	Std dev=0.2	Std dev=1.7	Std dev=1.0	

Table 3. Uniformity Test at -50 deg F

	Test rounds (with	acrylic bags)	Control rounds (with rayon bags)		
Zone	Velocity (ft/sec)	Pressure (kpsi)	Velocity (ft/sec)	Pressure (kpsi)	
3 .	Mean=737	Mean=8.6	Mean=744	Mean=8.8	
	Std dev=2.4	Std dev=0.2	Std dev=2.7	Std dev=0.2	
7	Mean=1489	Mean=31.6	Mean=1498	Mean=32.2	
	Std dev=3.9	Std dev=0.5	Std dev=4.6	Std dev=0.7	

Table 4. Sequential Environmental: Number of Damaged M67 after Logistic Vibrations

Test Temperature	Acrylic Bags	Rayon Bags
+145 deg F	14	19
- 50 deg F	1	2

Table 5. Sequential Environmental: Number of Damaged M67 with Propellant Leakage after Logistic Vibrations

Test Temperature	Acrylic Bags	Rayon Bags
+145 deg F	4	9
- 50 deg F	0	1

Table 6. Sequential Environmental: Total Number of Bag Damages after Loose Cargo Vibration (Fiber Container)

Test Temperature	Acrylic Bags	Rayon Bags
+145 deg F	24	36
- 50 deg F	15	25

Table 7. Performance Phase of Sequential Environmental Test; Ballistic Test Results

Test Test rounds (with		acrylic bags)	Control rounds (with rayon bags)		
Temperature	Velocity (ft/sec)	Pressure (kpsi)	Velocity (ft/sec)	Pressure (kpsi)	
+145 deg F	Mean=1581	Mean=40.7	Mean=1589	Mean=40.9	
	Std dev=2.3	Std dev=0.5	Std dev=11.0	Std dev=0.7	
-50 deg F	Mean=1495	Mean=31.9	Mean=1510	Mean=33.3	
	Std dev=3.3	Std dev=0.6	Std dev=3.2	Std dev=0.5	

Table 8. Performance Phase of Sequential Environmental Test: Percentage of M67 with

Recoverable Cloth Residue after Ballistic Firing

Test Temperature	Acrylic Bags	Rayon Bags
+145 deg F	0%	25%
-50 deg F	0%	55%

Table 9. Predicted Mean Lifetimes Based on 10% Loss in Tensile Strength

Table 9. Fledicted Mean Lifetimes Based on 10% Loss in 198iste Stiength						
	Acrylic eloth	Rayon cloth	Acrylic better			
			than rayon by			
25°C & 75% RH	143 years	16 years	9 times			
35.38°C & 15% RH	37 years	3.4 years	11 times			

Deleted per note3.

Figure 1 \$ 2 deleted per NOTE 3.

PAN R2A2031

Configuration Control Board Evaluation Form Remark - continuation.

NOTE 3: Delete Paragraphs 5, 6, Table 9 and Figure 1 & 2 on service life prediction. Service life of the Acrylic cloth will be addressed by a separate document to be submitted at a later date. It is also recommended that the service life prediction study be coordinated with Predictive Engineering (Dr. Eric Bixon).

Add Paragraph 5 to the ECP continuation sheet as below:

"5. Result of accelerated aging test:

Acrylic cloth shows a much greater resistance to degradation based on accelerated aging data taken at 65,75, and 85 degrees C and 75 % RH. Each data point in the test matrix is replicated four times. There is statistical evidence that the acrylic fiber is more heat and acid resistant at the accelerating conditions. If the data is extrapolated to ambient, a greater service life will be obtained using the acrylic fiber. "

Do PRIL R. Blum

RESEARCH DIRECTOR PREDICTIVE ENGINEER

AMSTA-AR-QAT-P

DEC 11, 2002

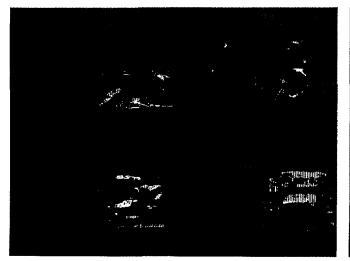
AV 880-3705

email ebixon@pica.ARmy.mil

Figure 3. Cloth Residue

>ACRYLIC - NO RECOVERABLE RESIDUE

> RAYON RESIDUE:





AMSTA-AR-AEE -WECAC Compatibility Study Report, Analytical Research & Services

DATE March 15. 2002

REPORT NO. EWD-05 -02/C

CUSTOMER

Requester:

A,Eng

Charge No.: Requirement:

Compatibility Study of M1 Propellant, Lot. No.

RAD68051 with Acrylic Cloth Material

TEST

Test Performed:

Vacuum Compatibility at 100°C for 40 hours Mil-Std 286-C, Method 408.1.1

Method:

DATA

Component/Computation

ml gas at STP

Component 1 M1 Propellant

Component 2 Acrylic Cloth

Control (1 + 2)

Mixture (I+2) M1 / Acrylic Cloth

6.38

Mixture- Control CONCLUSION

(X) Compatible

() Marginaly Compatible

Incompatible

Work By Keith Rowe

Approved By

Thurs of Rally

NOTICE C	F REVISION (NOR)		1. DATE (YYMMDD)	Form Approved
THIS REVISION DESCRIBED BELOW HA	2 12 20	OMB No. 0704-0188		
Public reporting burden for this collection of informa searching existing data sources, gathering and mainta regarding this burden estimate or any other aspect	2. PROCURING ACTIVITY NO.			
Defense, Washington Headquarters Services, Directors 22202-4302, and to the Office of Management and	R2A2031 3. DODAAC			
RETURN YOUR COMPLETED FORM TO EITHER OF TO OFFICER FOR THE CONTRACT/PROCURING ACTIVITY	HESE ADDRESSES. RETURN COMPLETI	ED FORM TO THE GOVERNMI	ENT ISSUING CONTRACTING	J. DODAAO
4. ORIGINATOR	b. ADDRESS (Street, City, State, Zip Code) 5. CAGE CODE			6. NOR NO.
a. TYPED NAME (First, Middle Initial, Last)	US ARMY TACOM-ARDI	EC	19200	R2A2031 8. DOCUMENT NO.
ADRIANA L. ENG	AMSTA-AR-WEE-B PICATINNY ARSENAL, I	NT 07806-5000	7. CAGE CODE 19203	9205470
9. TITLE OF DOCUMENT	TICATITATI ARBBITAR	10. REVISION LETTE		11. ECP NO.
BAG		a. CURRENT	b. NEW	R2A2031
		L	M	
12. CONFIGURATION ITEM (OR SYSTEM CRTG, 105MM, M314A3 ILLUMIN XM916 DPICM, M629 TACTICAL (ATING, M927 HERA, M1	HE, M60A2 SMOKE	, M84 SMOKE (M8	4, M84A1, M84B1),
13. DESCRIPTION OF REVISION				
ZONE B8				
NOTE 2, CHANGE				
FROM: "MATERIAL: CLOTH, SPU	JN, VISCOSE RAYON, RE	SIN IMPREGNATE	D CLASS I, SPEC M	IIL-C-43157 (NOTE
12)."	TO CY LOO II ODEO MI	G 10000 #		İ
TO: "MATERIAL: CLOTH, ACRY	LIC, CLASS II, SPEC MIL-	C-12800."		
ZONE A8				İ
NOTE 10, CHANGE				
FROM: "VIEW "A" IS FOR INCRE	MENT NO. 5 (PART NO. 9	205470-5) ONLY. L	EAD FOIL IS SEWN	N TO CLOTH OR
LEAD FOIL - LAMINATED CLOT	H - 9271884 IS USED FOR	THIS SIDE OF BAG	."	
TO: "VIEW "A" IS FOR INCREME	NT NO. 5 (PART NO. 9205	470-5) ONLY, LEA	D FOIL - 9205469 IS	SEWN TO CLOTH."
NOTE 12, DELETE IN ITS ENTIRE	RTY.			
DELETE "ALTERNATIVE MATER		R-VISCOSE RAYON	N, CLASS 7, SPEC N	AIL-C-43153."
NOTE 13, CHANGE FROM: "13" TO: "12"				
= **				
14. THIS SECTION FOR GOVERNMENT	USE ONLY			
<u> </u>	upplemented by this NOR may be us			
 	rust be received before manufacture document shall make above revision		-	
b. ACTIVITY AUTHORIZED TO APPROVE CHA	NGE FOR GOVERNMENT	c. TYPED NAME (First,		
TACOM-ARDEC, AM				
d. TITLE ARTHUR J. HEYDERMAN	e. SIGNATURE	$\alpha A = 1$)	f. DATE SIGNED (YYMMDD)
Chief, FSAC Prod & Log Eng	Spt Team	affund		7003 0211
15.a. ACTIVITY ACCOMPLISHING REVI		D (Signature)		c. DATE SIGNED
	<u> </u>	··		<u>, , </u>
DD FORM 1695, APR 92 (EF-V1) (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.				

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NOTICE O	Form Approved OMB No. 0704-0188					
Public reporting burden for this collection of informs searching existing data sources, gathering and mainte regarding this burden estimate or any other aspect Defanse, Washington Headquarters Services, Directors	` 					
22202-4302, and to the Office of Management and RETURN YOUR COMPLETED FORM TO EITHER OF T. OFFICER FOR THE CONTRACT/PROCURING ACTIVITY	f Budget. Paperwork Reduction Project HESE ADDRESSES. RETURN COMPLET	t (0704-0188). Washington D ED FORM TO THE GOVERNM	C 20503. PLEASE DO NOT	2 000440		
4. ORIGINATOR	b. ADDRESS (Street, City, State,	Zip Code)	5. CAGE CODE	6, NOR NO.		
a. TYPED NAME (First, Middle Initial, Last)	US ARMY TACOM-ARD	_ ·	19200	R2A2031		
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